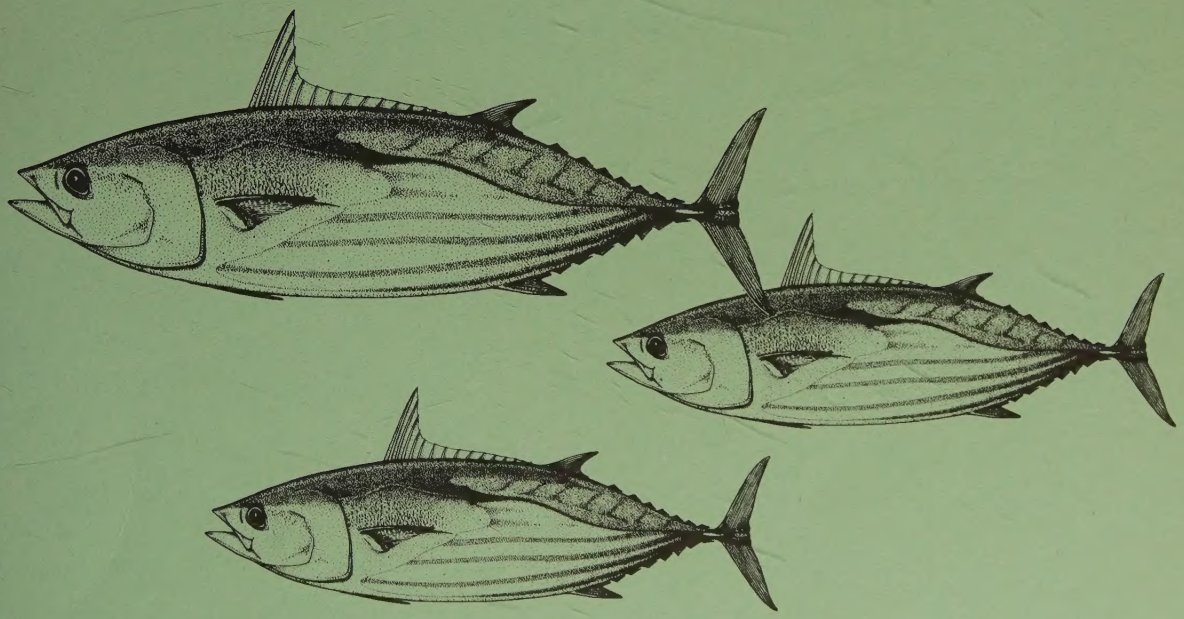
November 1974
No. 11

FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



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U.S. DEPARTMENT OF COMMERCE
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FISHING INFORMATION

NOVEMBER 1974 , No. 11

B. J. Rothschild, Director, SOUTHWEST FISHERIES CENTER
I. Barrett, Deputy Director
R. Shomura, Director, Honolulu Laboratory

PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) a narrative description of subsurface temperature structure for parts of the North Pacific, 4) charts of winds and pressures for the eastern North Pacific, 5) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 6) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

L.E. Eber, Leader
Fishery Information Systems
Southwest Fisheries Center
La Jolla, California

The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Office of Management and Budget, August 20, 1973; this approval expires June 1976.

Submitted for publication - December 23, 1974

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L.Eber (Figures 4 and 6)
F.Miller (Figures 8 and 9)
J.Renner (Figures 1,2,3,5,7, and 15-day Supplement)
J.F.T. Saur (Figures 10,11, and 12)

TECHNICAL EDITOR:
K.Raymond

CARTOGRAPHY:
R.Allen

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National Weather Service, San Diego, California
Nation Ocean Survey, Pacific Marine Center, Seattle, Washington
Pacific Environmental Institute, Fisheries Research Board of Canada, West Vancouver, British Columbia, by L.F. Giovando from observations by S.G. Westhaver at Langara Island Light: D.L. Kupillas at Cape St. James Light; L. Collins at Kains Island Lightstation; J.G. McNeil at Amphitrite Point Light.
Scripps Institution of Oceanography, La Jolla, California
Fishing Vessels, Bette M., Bold Contender, Carol Virginia, City of San Diego, Frances Ann, Independence, Larry Rose, Marco Polo, Marietta, Pacific Queen, Pan Pacific, Polaris, Queen Mary, Raefello, San Juan, Sea Treasure.

Expendable bathythermograph and salinity observations are made by the mates and engineers of the Californian of Matson Navigation Co. and SS Mariposa of Pacific Far East Line. The data are processed under supervision of D. R. McLain at the NMFS Pacific Environmental Group, Monterey, using computer facilities of the Fleet Numerical Weather Center. The project is partially supported by the National Science Foundation and the Office of Naval Research under Government NAonr-9-74.

Sea Surface Temperature and Environmental Conditions

L. EBER AND F. MILLER

Eastern North Pacific

Seasonal cooling continued to decrease temperatures in the surface layer of the eastern North Pacific in November 1974. The temperature decreases were greatest in the central portion 35°-50°N, west of 135°W, and exceeded the normal October-November change in this region. Consequently, there was some intensification and eastward spreading of negative deviations from normal in the 30°-45°N latitude zone along with a reduction of positive deviations between 45° and 50°N. Conversely, positive deviations increased slightly off British Columbia and the State of Washington and in the region northwest of Hawaii, between 25° and 35°N.

These changes had only minor effects on the pattern of anomalous sea surface temperatures (Figure 5). A central region of relatively cold surface waters 30°-45°N, west of 145°W was partially encircled by waters with above-normal temperatures, to the north, east and south. Relatively cool conditions also occurred in the upper portion of the Gulf of Alaska and off the North American West Coast, south of 45°N.

The mean circulation pattern was characterized by two anticyclonic cells in the zone 30°-35°N, associated with high barometric pressure, while low pressures prevailed in the Gulf of Alaska and westward along 55°N (Figure 2). The latter were below normal by as much as 6 millibars, which resulted in a sharp north-south gradient and strong zonal winds from 40°-55°N. This may have contributed to the above-normal seasonal cooling through increased heat loss by evaporation and wind-induced mixing with cold subsurface water.

Western North Pacific

Sea surface temperatures dropped 6°-8°F (3.3°-4.4°C) east of northern Honshu and Hokkaido from October-November 1974, wiping out the remnants of the warm pool which had been present since August. Consequently, temperature deviations from normal were mostly negative east of 140°E, between 30° and 50°N. Reduced seasonal cooling occurred farther south, between 20° and 30°N and off southern Honshu, resulting in relatively warmer conditions reflected by positive deviations of surface temperatures.

Eastern Tropical Pacific

From October through November, in the southern hemisphere tropical waters, seasonal heating will normally increase the sea surface temperature by 2°-4°F (1.1°-2.2°C) east of 95°W. To the west of 95°W temperatures increase less than 2°F (1.1°C). In the northern hemisphere, temperatures normally show the greatest seasonal decrease, which ranges from 2°-3°F (1.1°-1.6°C), west of Baja California.

In November 1974 there was a warming trend north of the equator, east of 110°W. Negative anomalies had covered a large part of this area in October, but by November the sign of the anomalies had reversed (Figure 9). Southwest of Baja and along the equator west of 140°W temperatures remained 2°-4°F (1.1°-2.2°C) below normal.

Along the equator the equatorial front is normally a dominant feature east of 140°W until January (Figure 8). Alternating positive and negative anomalies of 2°-4°F (1.1°-2.2°C) just north of the equator and east of 140°W reflect north-south departures of the equatorial front from its normal position.

Warmer-than-normal temperatures have persisted since September west of Peru between 85°W and 100°W. In November the tongue of warm water, and positive anomaly (Figures 8 and 9), appeared to have shifted about 300 miles closer to the coast of Peru than in October 1974.

Subsurface Temperature Structure in the Northeast Pacific Ocean

J. F. T. Saur

Subsurface temperature sections are presented in this issue for three ship routes between Hawaii and the U.S. West Coast: Seattle to Honolulu (Figure 10), Honolulu to San Francisco (Figure 11) and Los Angeles to Honolulu (Figure 12). The observations were taken in the latter part of October and represent periods which follow those for corresponding sections published in the October issue of Fishing Information by 1-3 weeks.

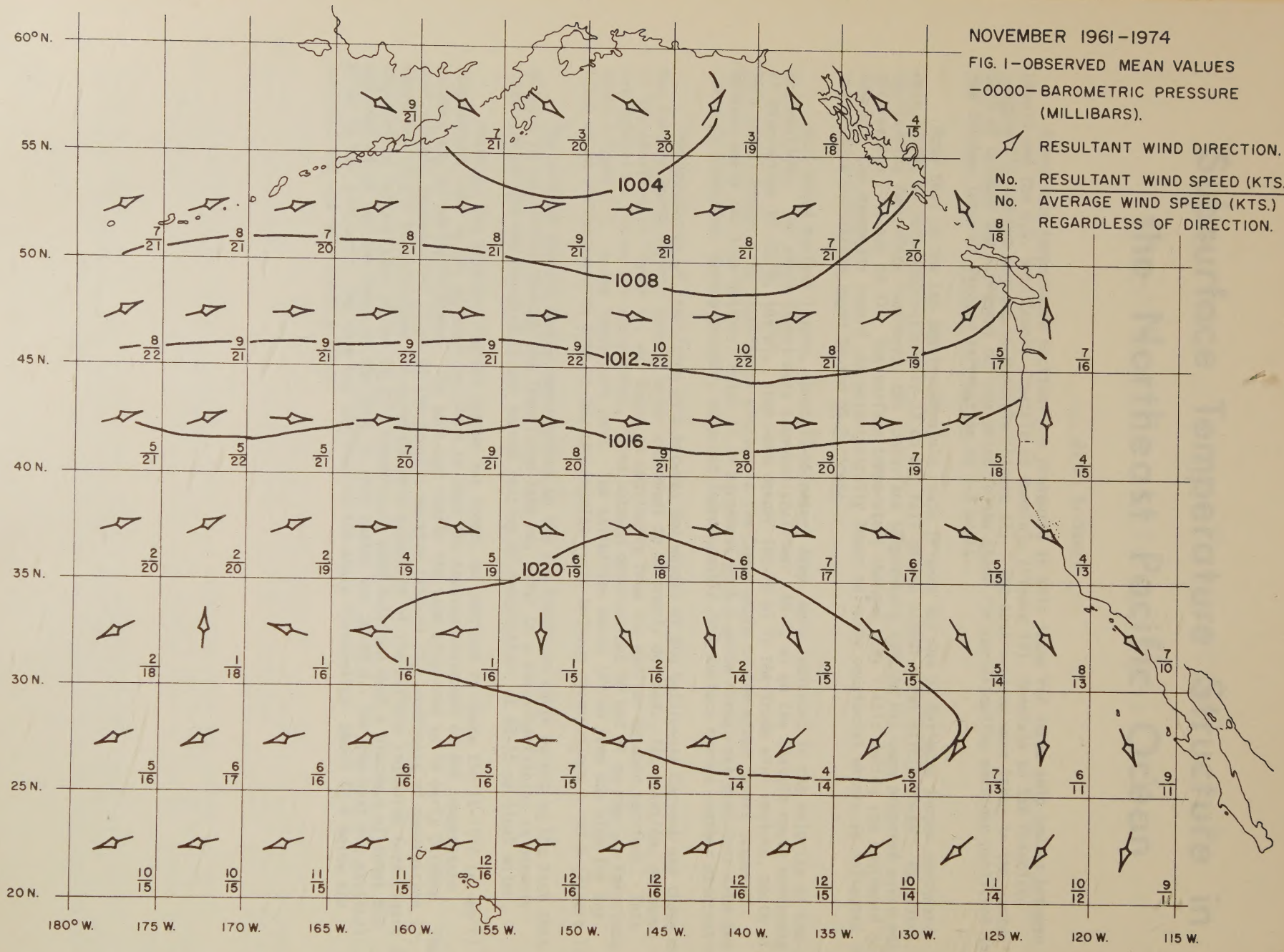
Note that on the Los Angeles-Honolulu route (Figure 12) the SS Mariposa jogged southward near 145°W, so that observations 17-32 do not fall on the normal great circle route. To avoid overlapping subsurface isotherms, the subsurface temperature section has been prepared using only observation 1-15 and 22-31. The surface temperature changed very little during the southward jog. However, the movements toward characteristically lower salinity equatorial waters is reflected in the surface salinities found by the SS Mariposa.

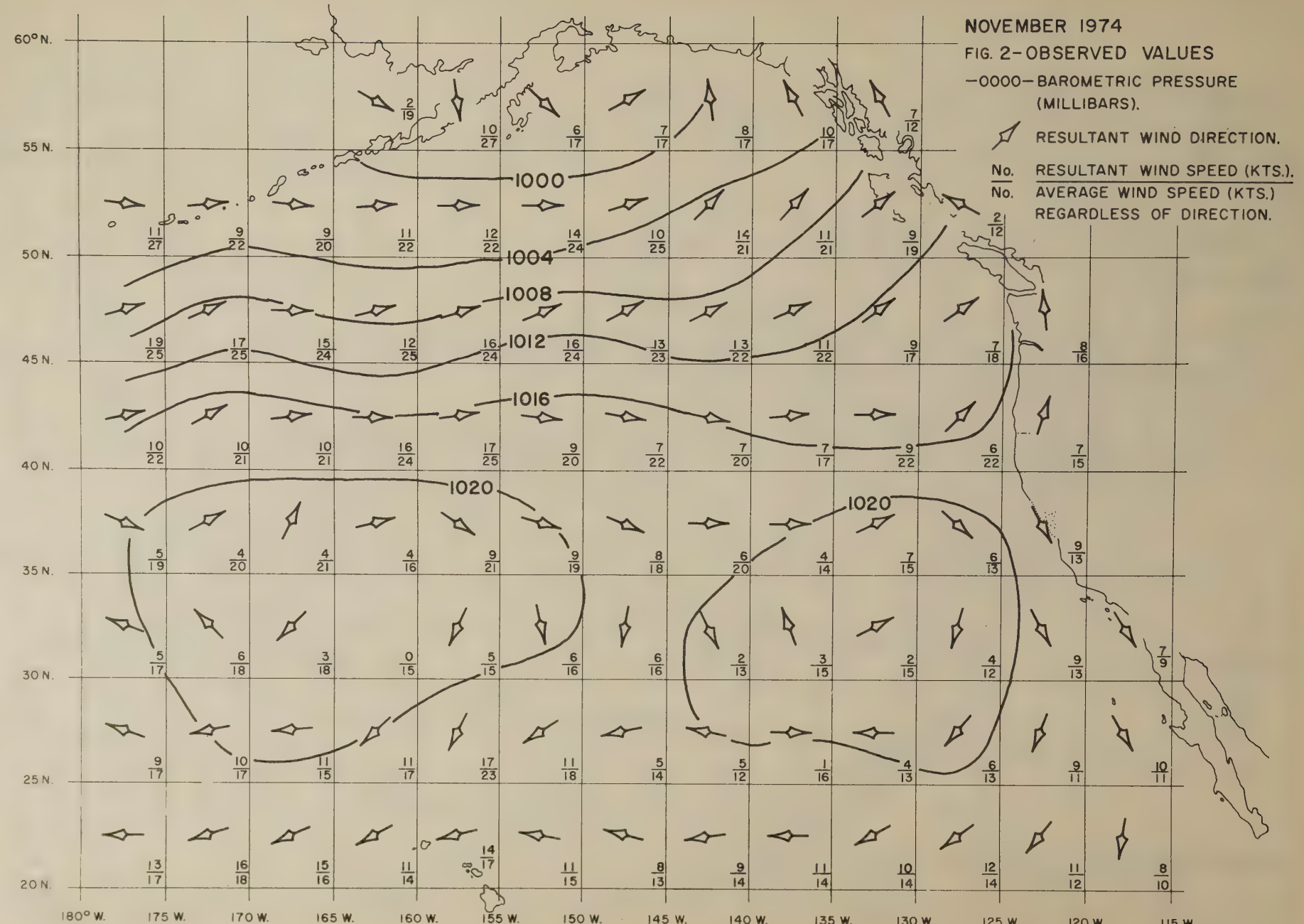
Well mixed surface layers, about 45-55 meters deep, were indicated in the majority of the observations. The mixed layers were somewhat shallower (30-40 m) on the Seattle route northeast of observation 19 (35°N, 145°W). They were deeper (60-70 m) in the trade wind regions, south of 24°N on all routes. No significant changes in the temperature of the mixed layers occurred between early and late October, which is in agreement with a below normal net heat loss from the ocean to atmosphere during October, computed independently from surface marine weather observations.

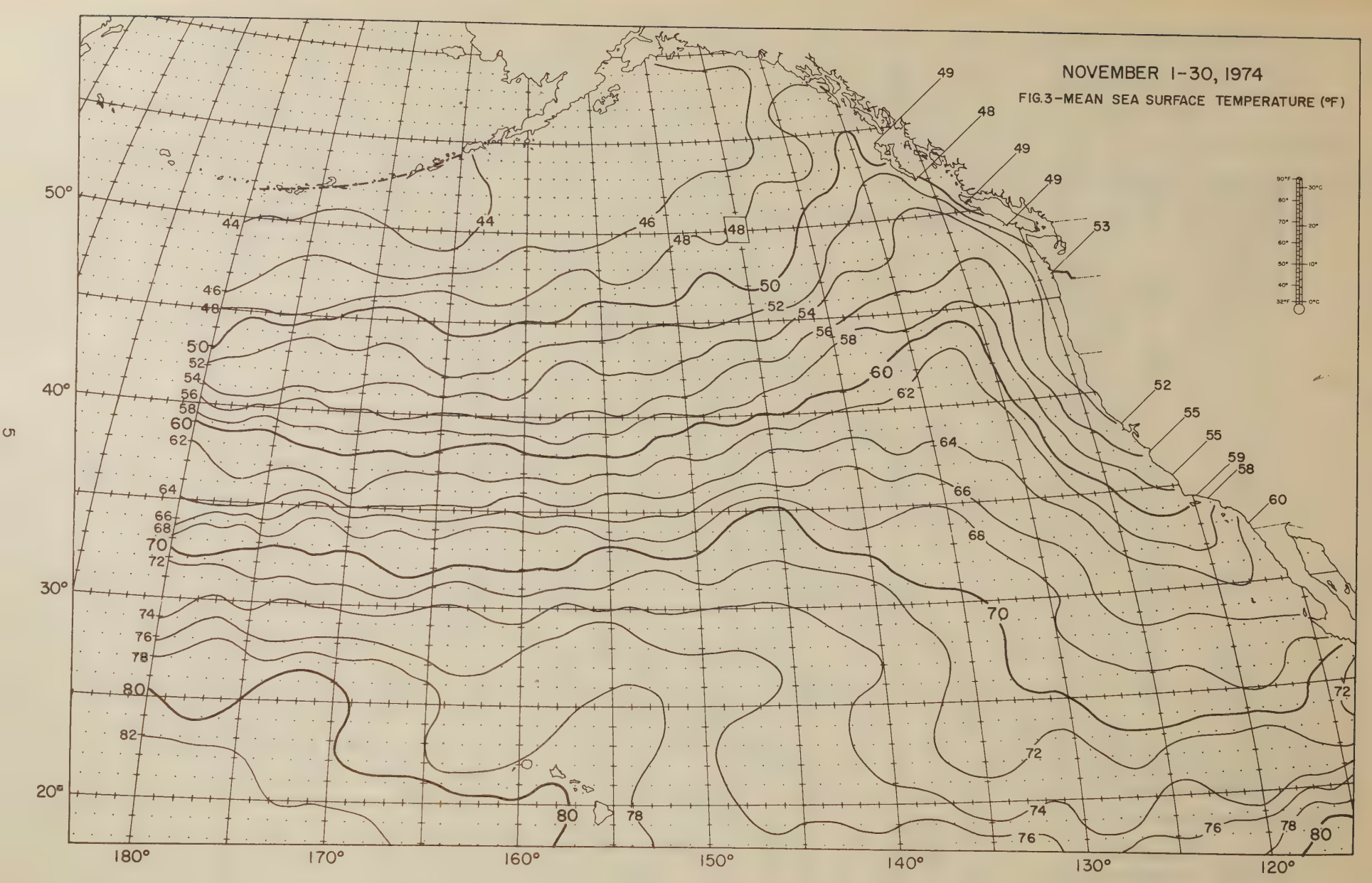
The boundaries of Transition Zone between the waters of the California Current and those of the Eastern North Pacific Central water continues to be poorly defined. Its location, as shown in the chartlet in Figure 11, was based on continuity from the earlier October sections. This interpretation places the sharp front, found between observations 20 and 21 on the San Francisco route (Figure 11), in the Transition Zone. The salinities above 34°/oo seem too high for the front to be continuous with that on the Los Angeles route between observations 5 and 6 (Figure 12).

The pair of closely spaced observations on the San Francisco route points up the fact that changes in properties through the Transition Zone may occur in a stepwise fashion at oceanic fronts which are not revealed by our normal spacing of observations at 65-75 nautical miles.

Although the albacore fishing season has ended, we continue to shade the 16-19°C (61-66°F) temperature zone in the vertical sections so that the seasonal movement of the temperature pattern may be easily followed. The zone had nearly the same structure as in early October. The most notable features are found on the Seattle section (Figure 10), northeast of observation 17, where the ship's track crosses the northeastward extension of the surface isotherms (see Figure 3). The surface intersection of the 16-19°C temperature zone extended over a distance of about 550 nautical miles and the depth of the zone in this region was 30-40 m. For the next 450 nautical miles to the southwest, the zone was confined to the sharp thermocline, about 50 m below the surface, and was only 10-20 m thick.

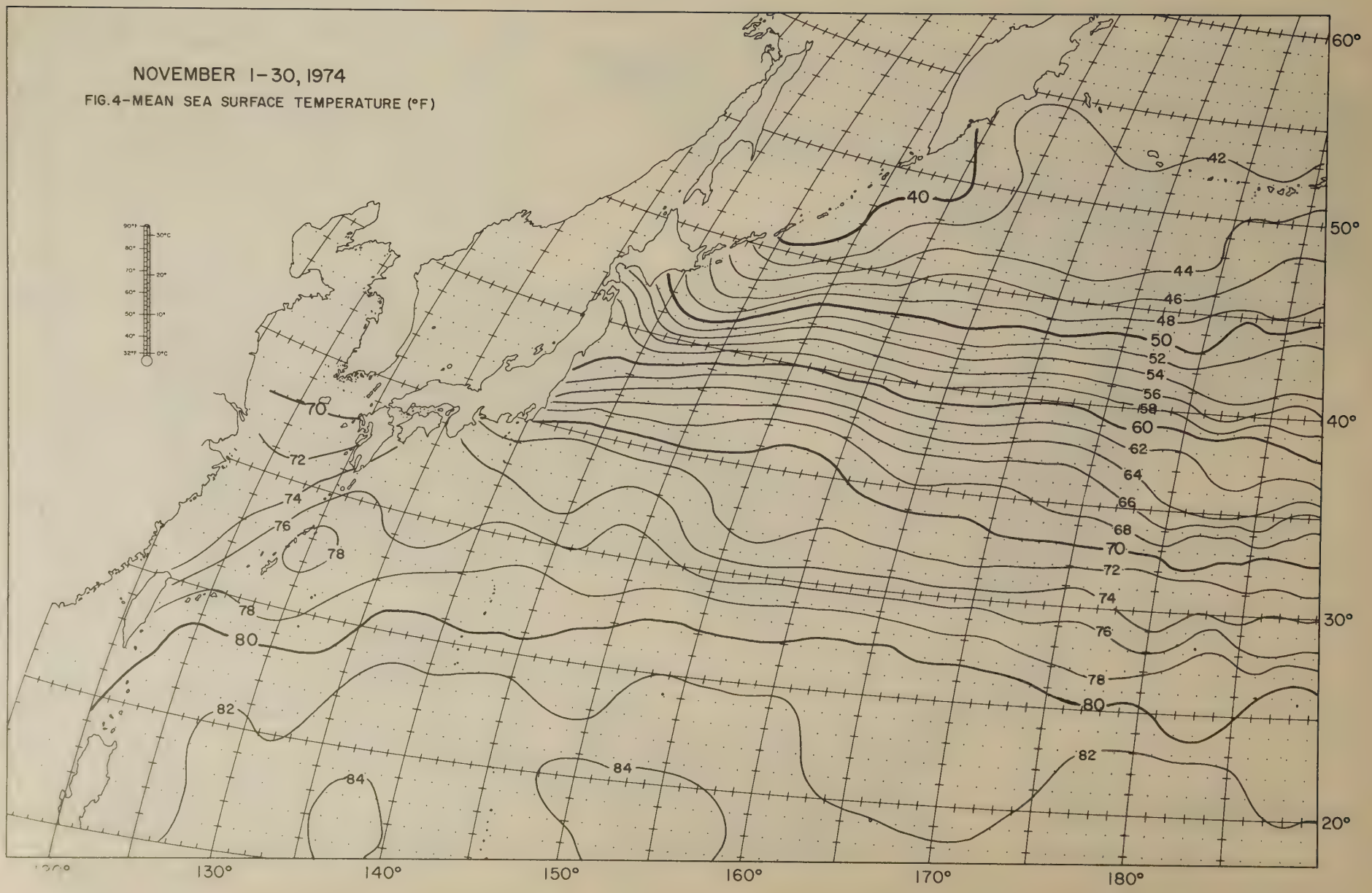

NOVEMBER 1961-1974
FIG. 1-OBSERVED MEAN VALUES
-0000- BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1016
1020
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

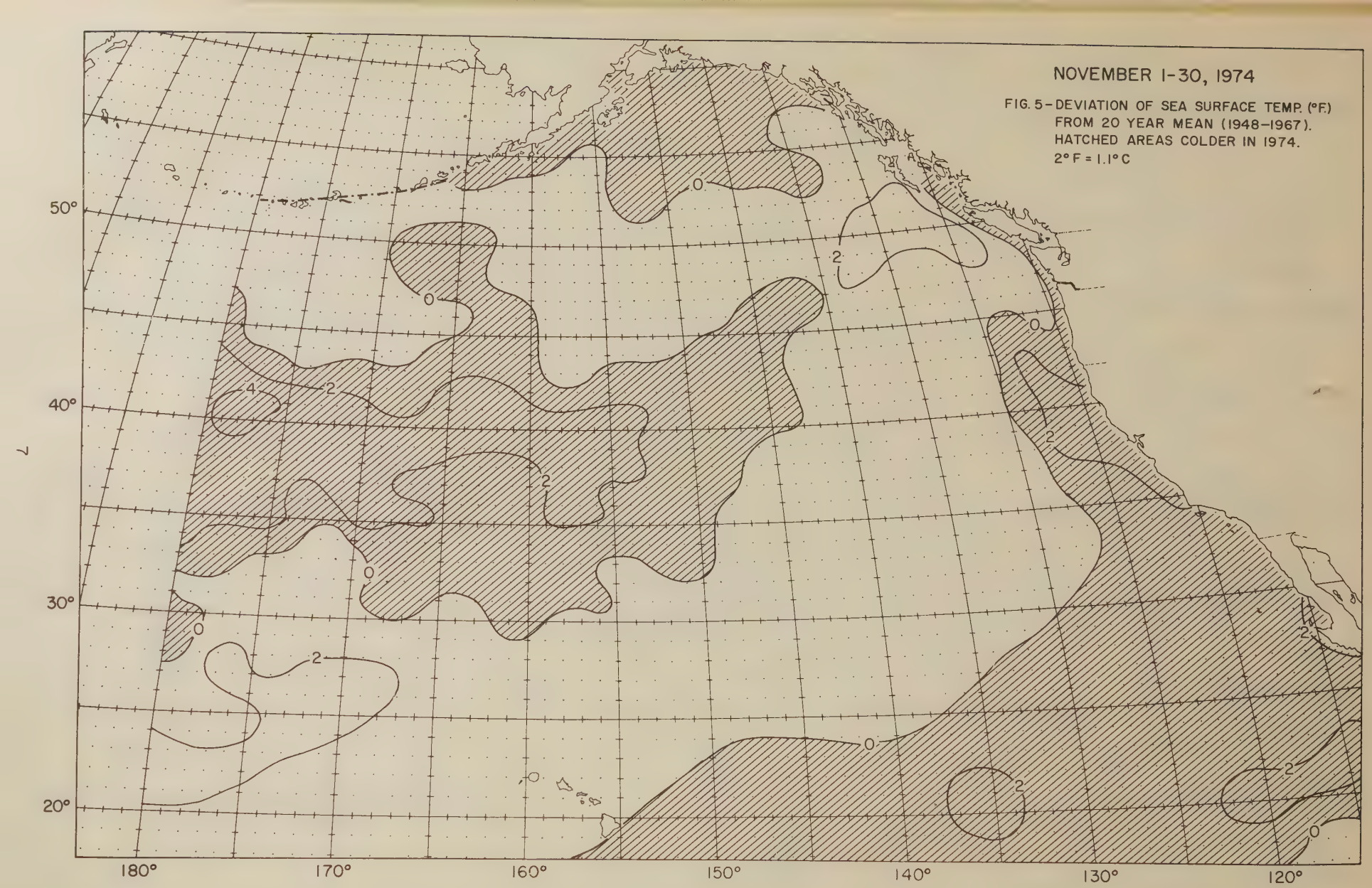

NOVEMBER 1974
FIG. 2-OBSERVED VALUES
-0000- BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1000
1004
1008
1012
1016
1020
1020
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

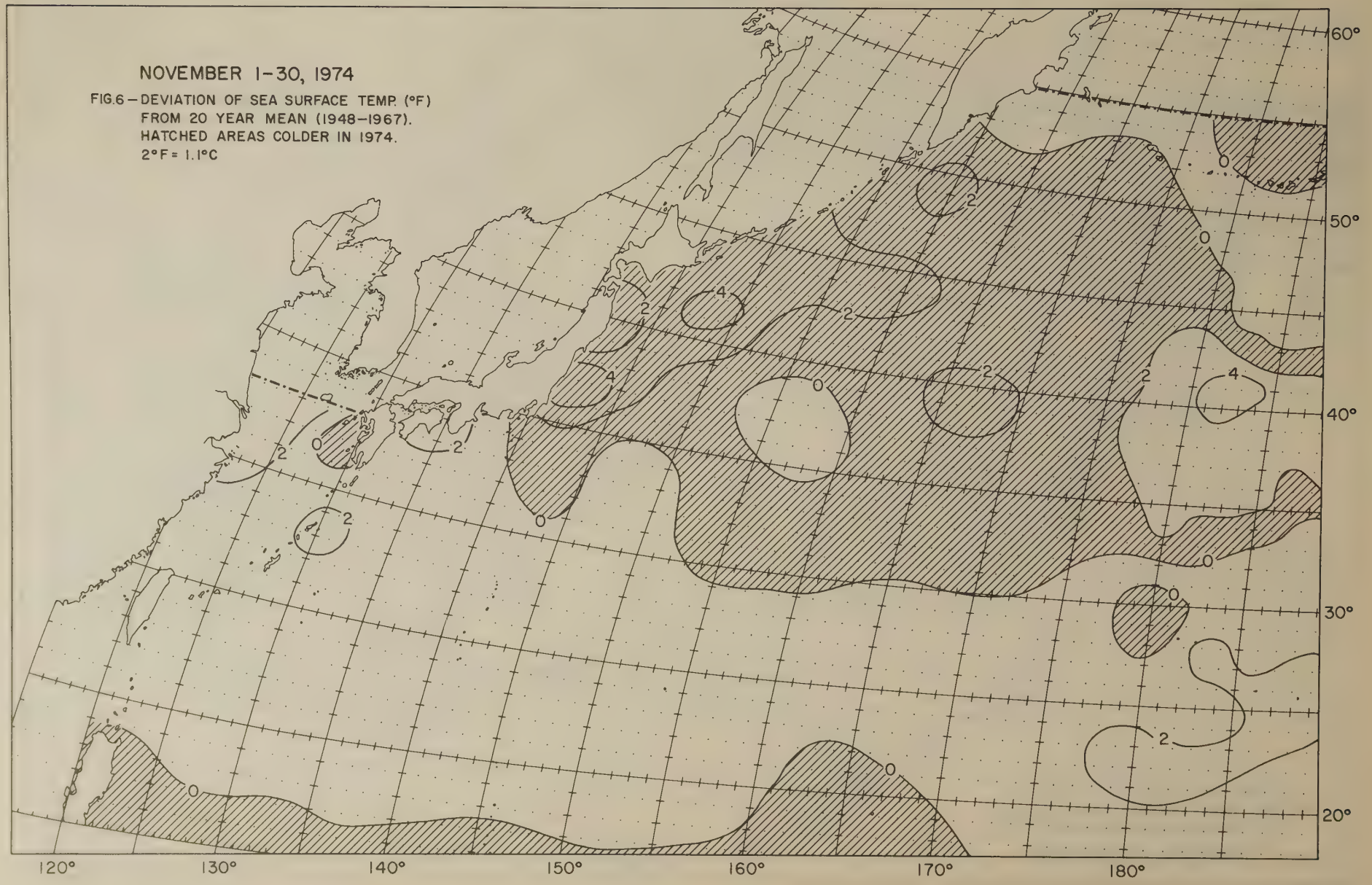

NOVEMBER 1-30, 1974
FIG.3-MEAN SEA SURFACE TEMPERATURE (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
90°F
80°
70°
60°
50°
40°
32°F
30°C
20°
10°
0°C

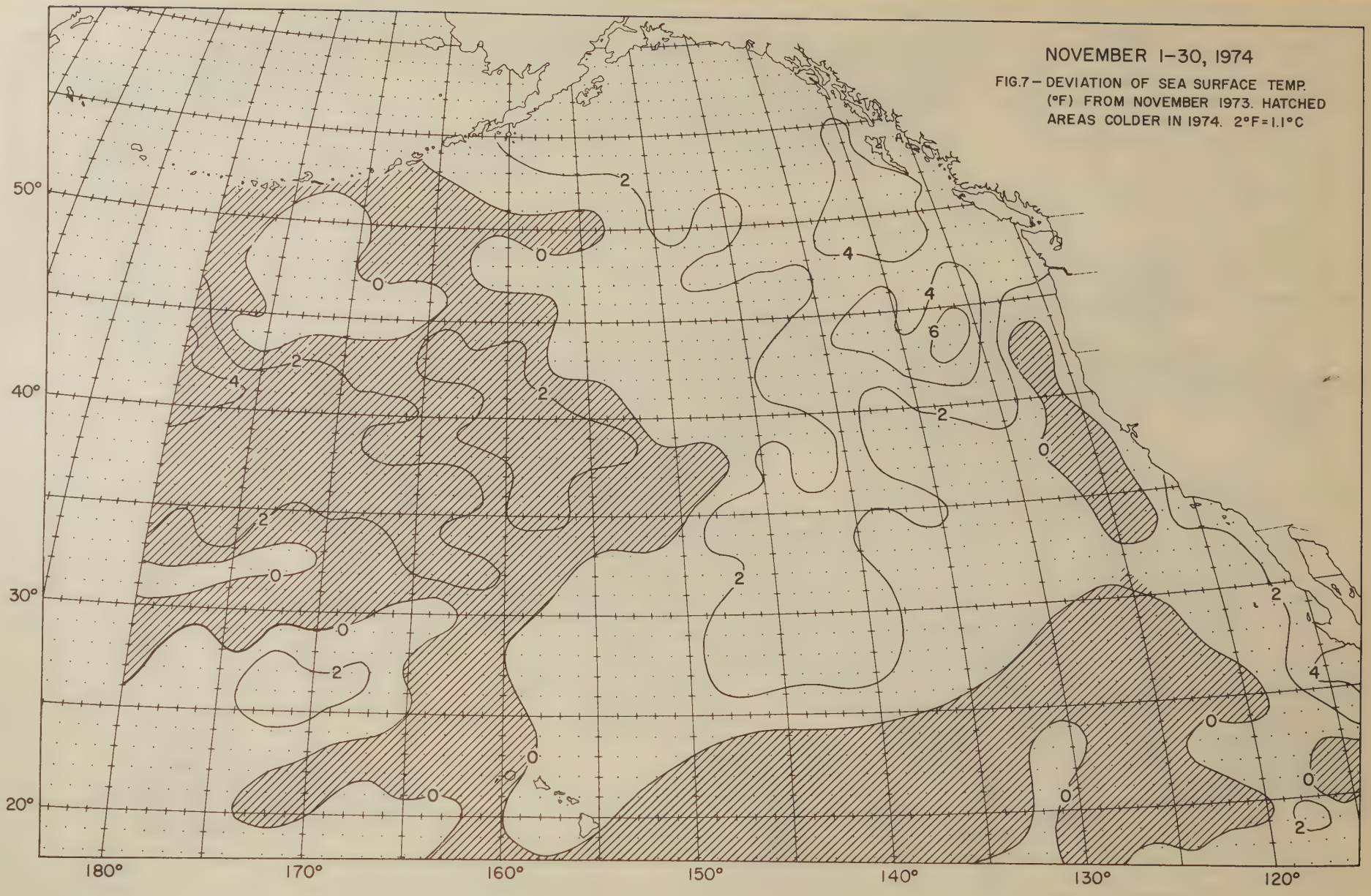
NOVEMBER 1-30, 1974

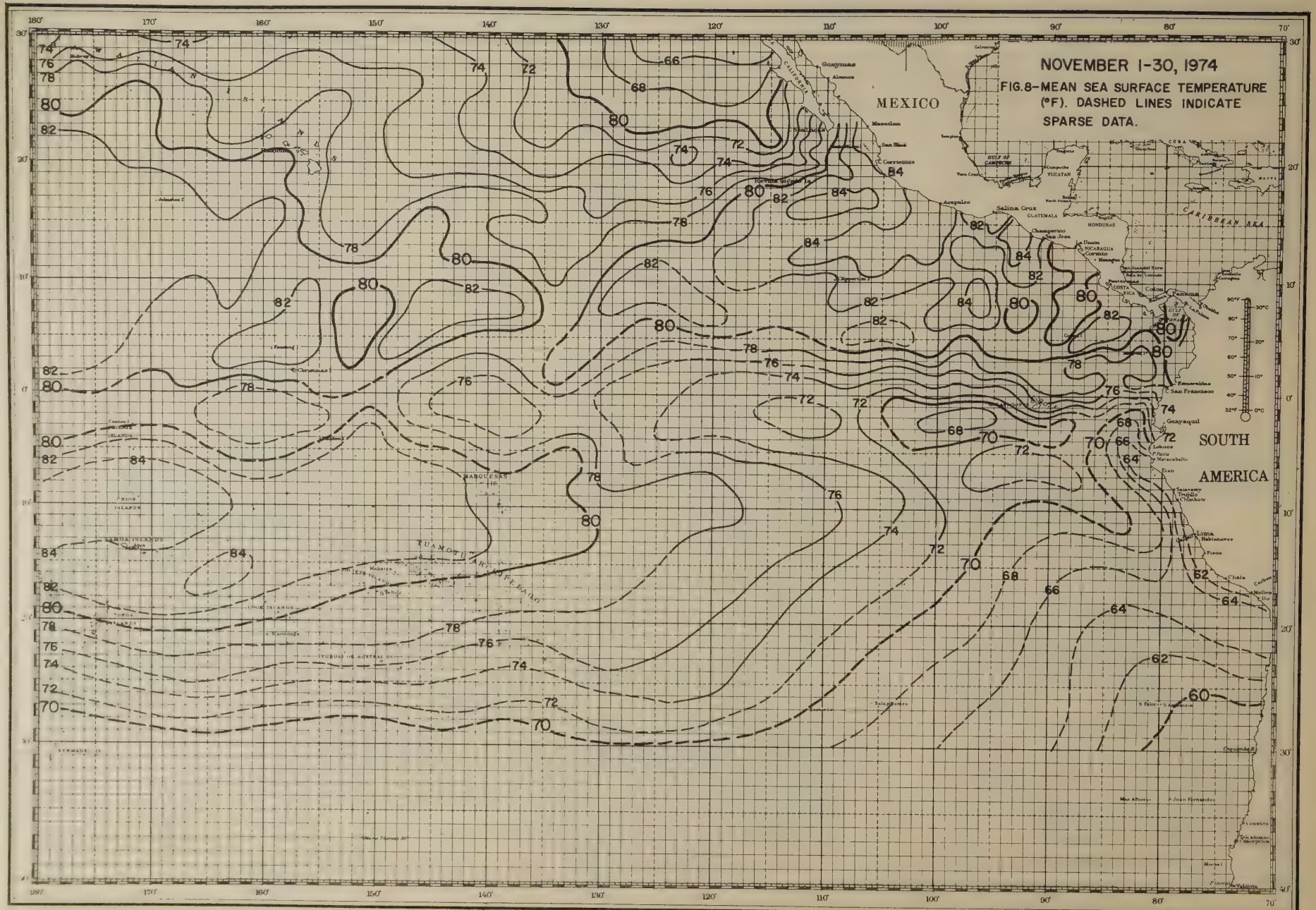
FIG.4-MEAN SEA SURFACE TEMPERATURE (°F)

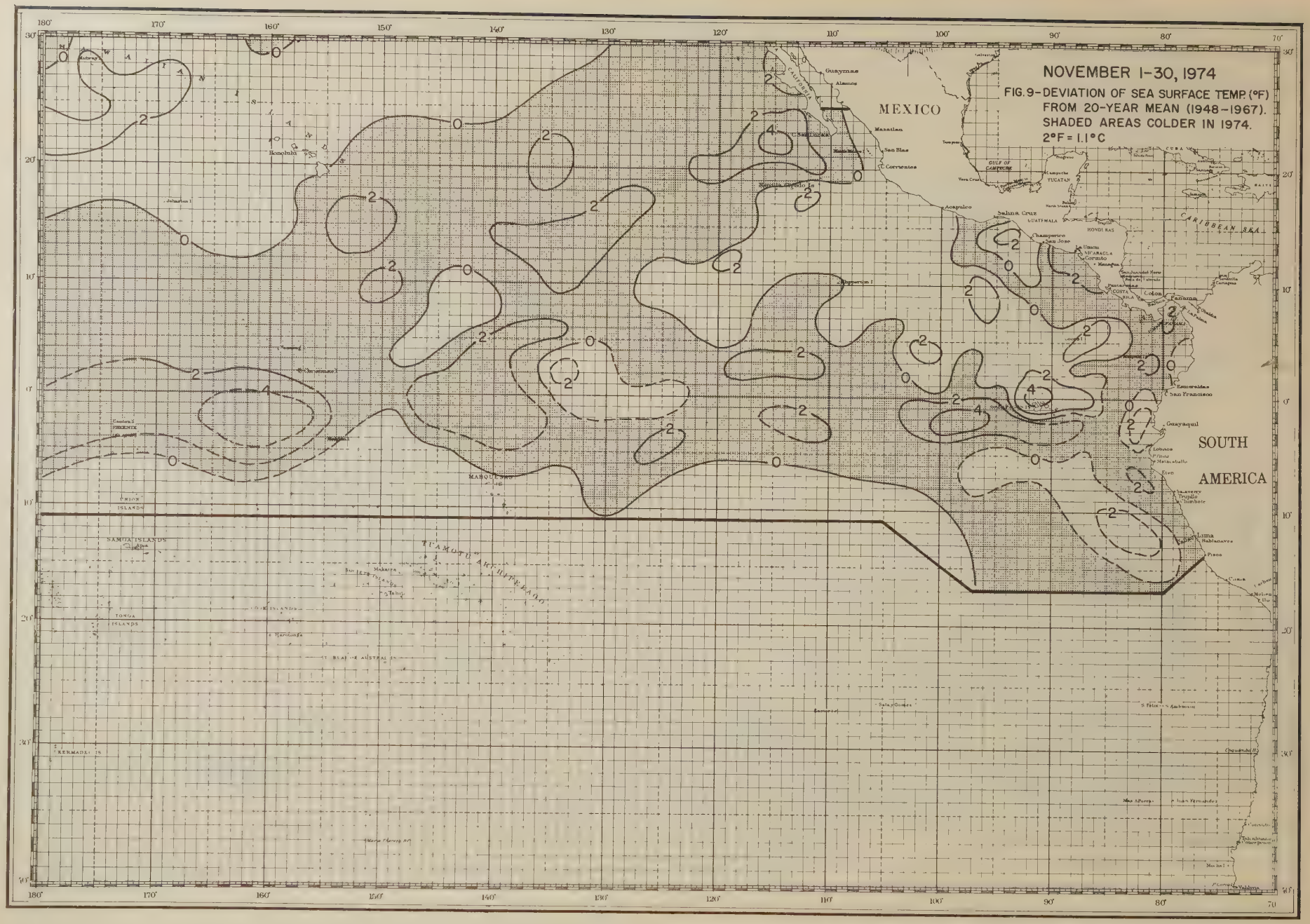



NOVEMBER 1-30, 1974
FIG. 5 - DEVIATION OF SEA SURFACE TEMP. (°F.) FROM 20 YEAR MEAN (1948-1967). HATCHED AREAS COLDER IN 1974.
2° F = 1.1° C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2
4


NOVEMBER 1-30, 1974
FIG.6 – DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20 YEAR MEAN (1948–1967). HATCHED AREAS COLDER IN 1974. 2°F = 1.1°C
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°
0
2
4


NOVEMBER 1–30, 1974
FIG.7 – DEVIATION OF SEA SURFACE TEMP. (°F) FROM NOVEMBER 1973. HATCHED AREAS COLDER IN 1974. 2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


NOVEMBER 1-30, 1974
FIG.8-MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CALIFORNIA
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
PANAMA
Acapulco
Salina Cruz
Manzanillo
Guaymas
Guayaquil
Callao
Lima
Valparaiso
Chile
Peru
MARQUESAS
SAMOA ISLANDS
TUAMOTU ARCHIPELAGO
TUBUAI OR AUSTRAL IS.
LINE ISLANDS
PHOENIX ISLANDS
CHRISTMAS I.
Juan Fernandez
Mas A Fuera
Mas A Tierra
Isla Pascua
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
40°


NOVEMBER 1-30, 1974
FIG. 9-DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20-YEAR MEAN (1948-1967). SHADED AREAS COLDER IN 1974.
2°F = 1.1°C
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
Honolulu
Guaymas
Mazatlan
San Blas
Acapulco
Salina Cruz
Panama
Colon
Guayaquil
Lima
Callao
Pisco
Arica
Iquique
Antofagasta
Valparaiso
Juan Fernandez
Easter I
PHOENIX IS
LINE IS
MARQUESAS IS
TUAMOTU ARCHIPELAGO
SAMOA ISLANDS
TONGA ISLANDS
KERMADEC IS
Galapagos Is
Cocos I
Malpelo I
Gorgona I
Tahiti
Rurutu
Makatea
Raivavae
Rapa
Mas Afuera
Mas a Tierra
Juan Fernandez
Salas y Gomez
Sala y Gomez
Desventuradas Is
Socorro I
Clipperton I
Johnston I
Christmas I
Fanning I
Suwarrow
Palmyra
Penrhyn
Manihiki
Rakahanga
Nassau I
Pukapuka
Danger Is
Penrhyn
Rarotonga
Aitutaki
Manuae
Mitiaro
Atiu
Mauke
Tongareva
Penrhyn
Manihiki
Rakahanga
Nassau I
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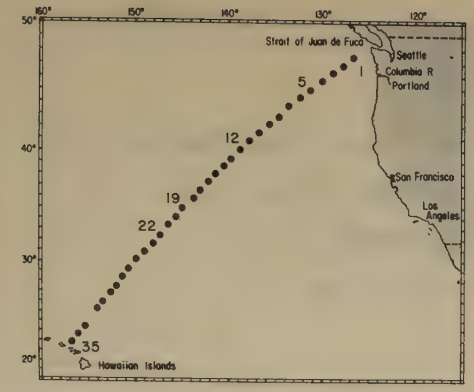
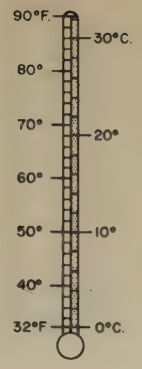
Aitutaki
Manuae
Mitiaro
Atiu
Mauke
Tongareva

FIGURE 10



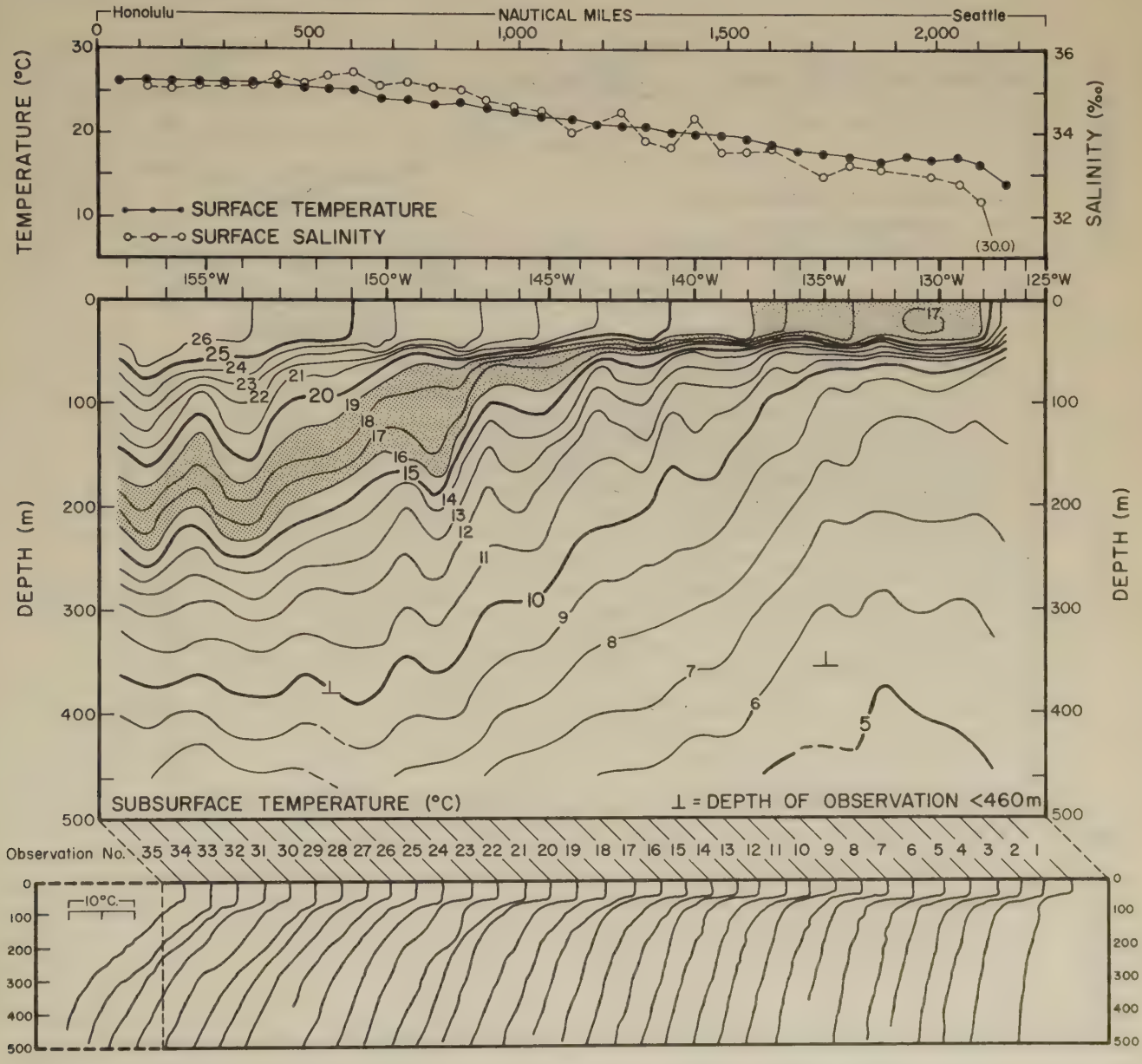


HONOLULU — SEATTLE
(Makapuu Pt. — St. of Juan de Fuca)

OCTOBER 22-28, 1974

CALIFORNIAN

VOYAGE 249



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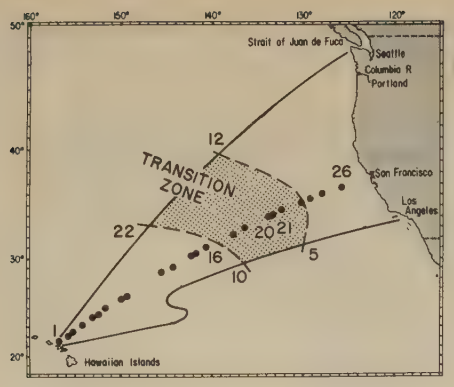
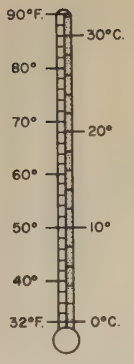




HONOLULU – SAN FRANCISCO

OCTOBER 26–30, 1974

MARIPOSA

VOYAGE 49

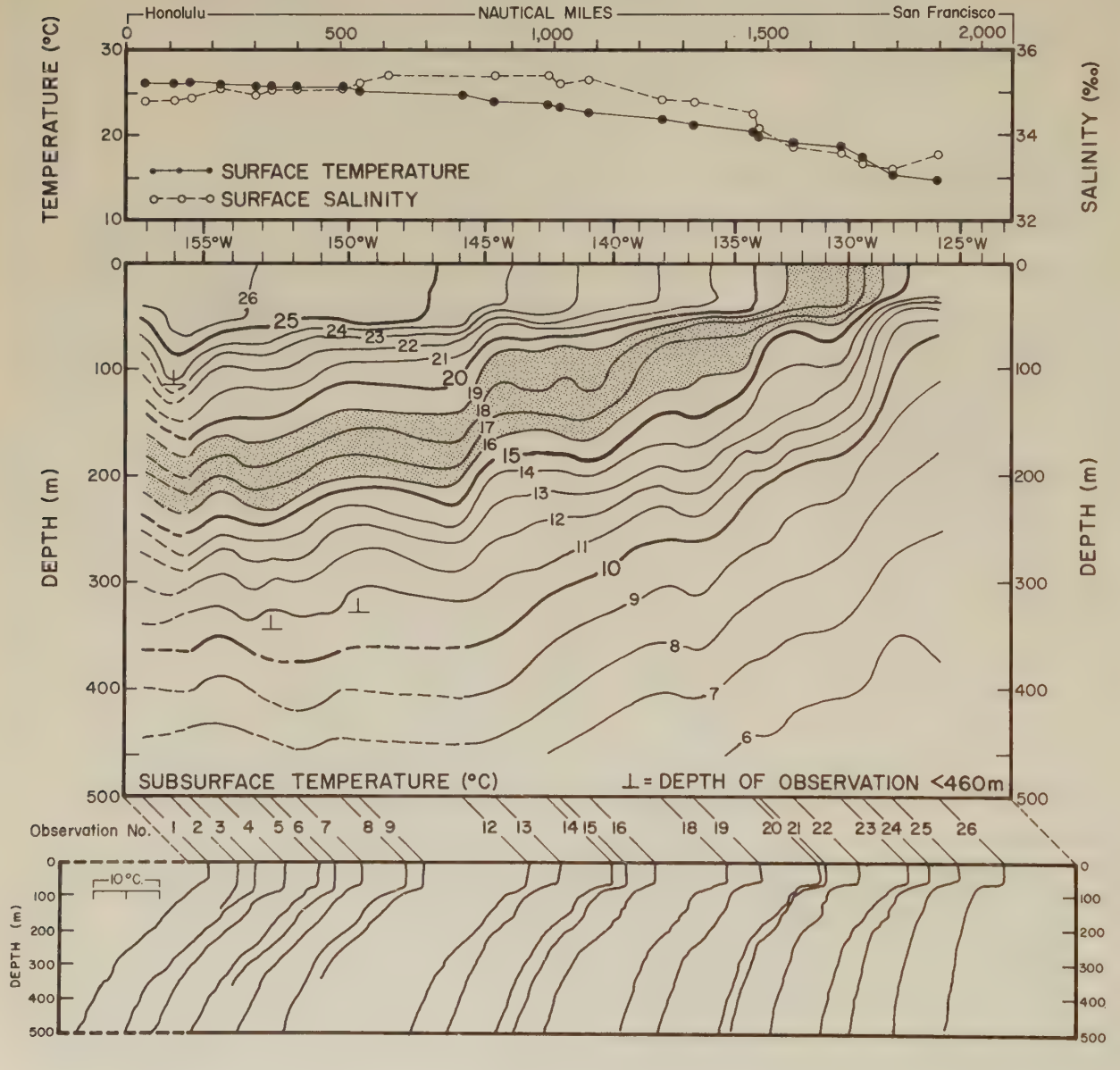
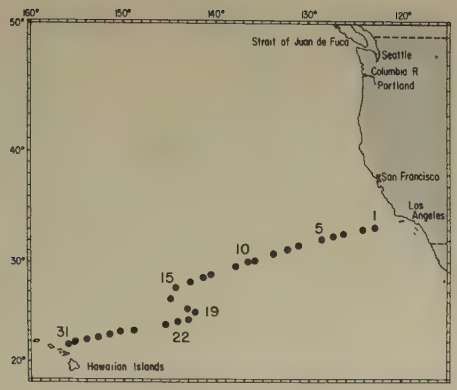
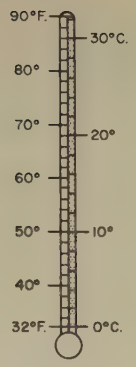


FIGURE 12



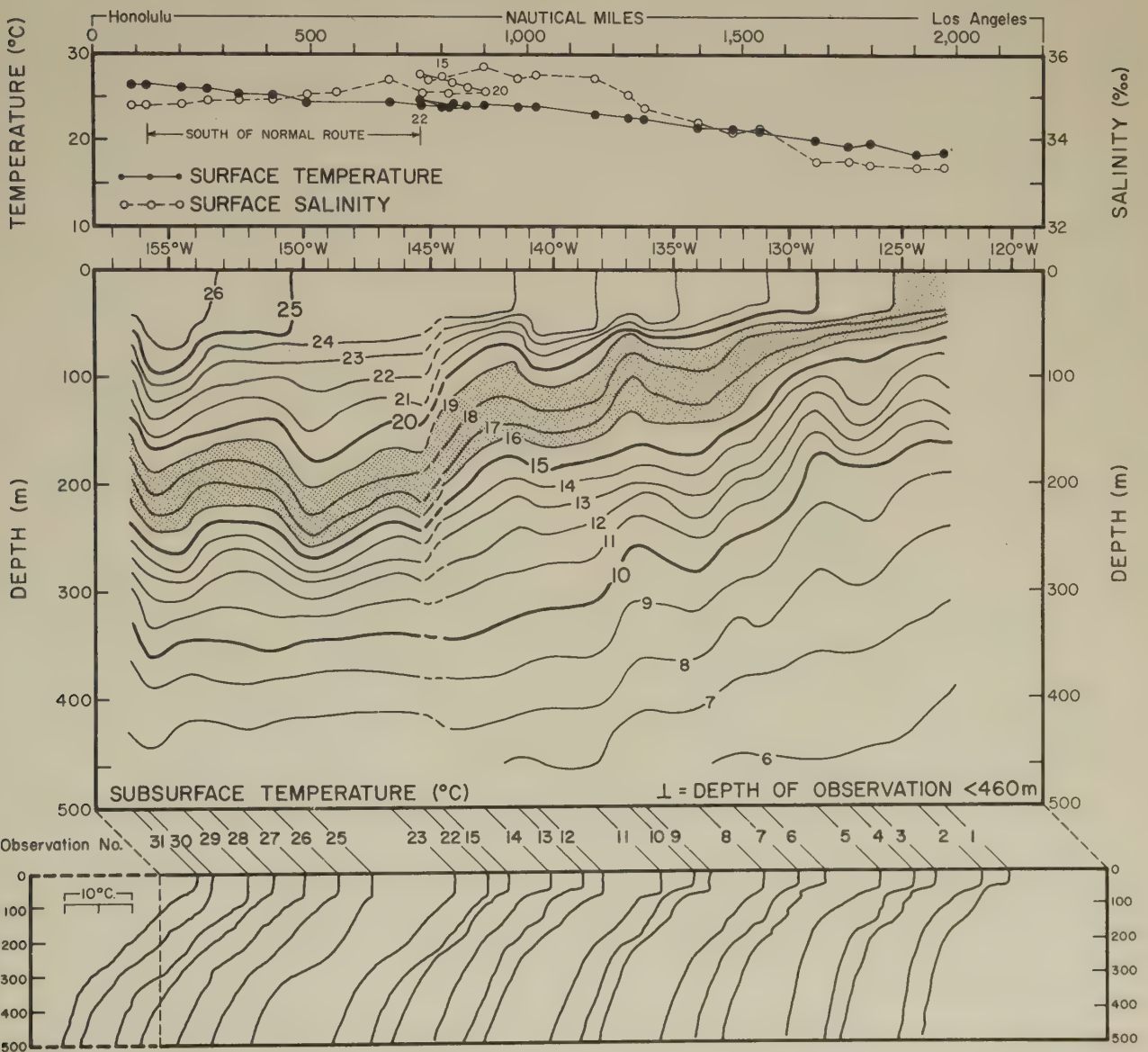


HONOLULU — LOS ANGELES

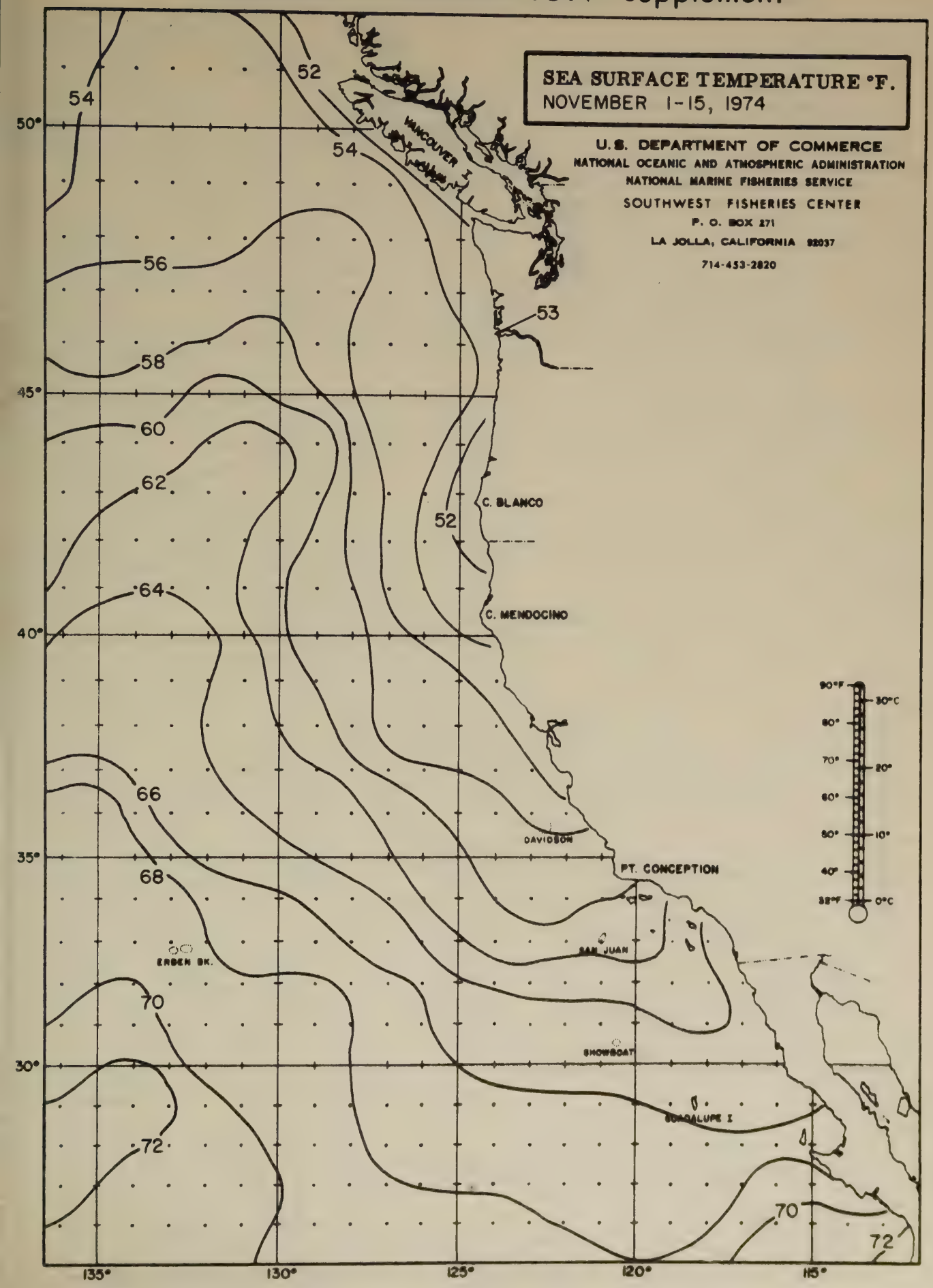
OCTOBER 14 - 20, 1974

MARIPOSA

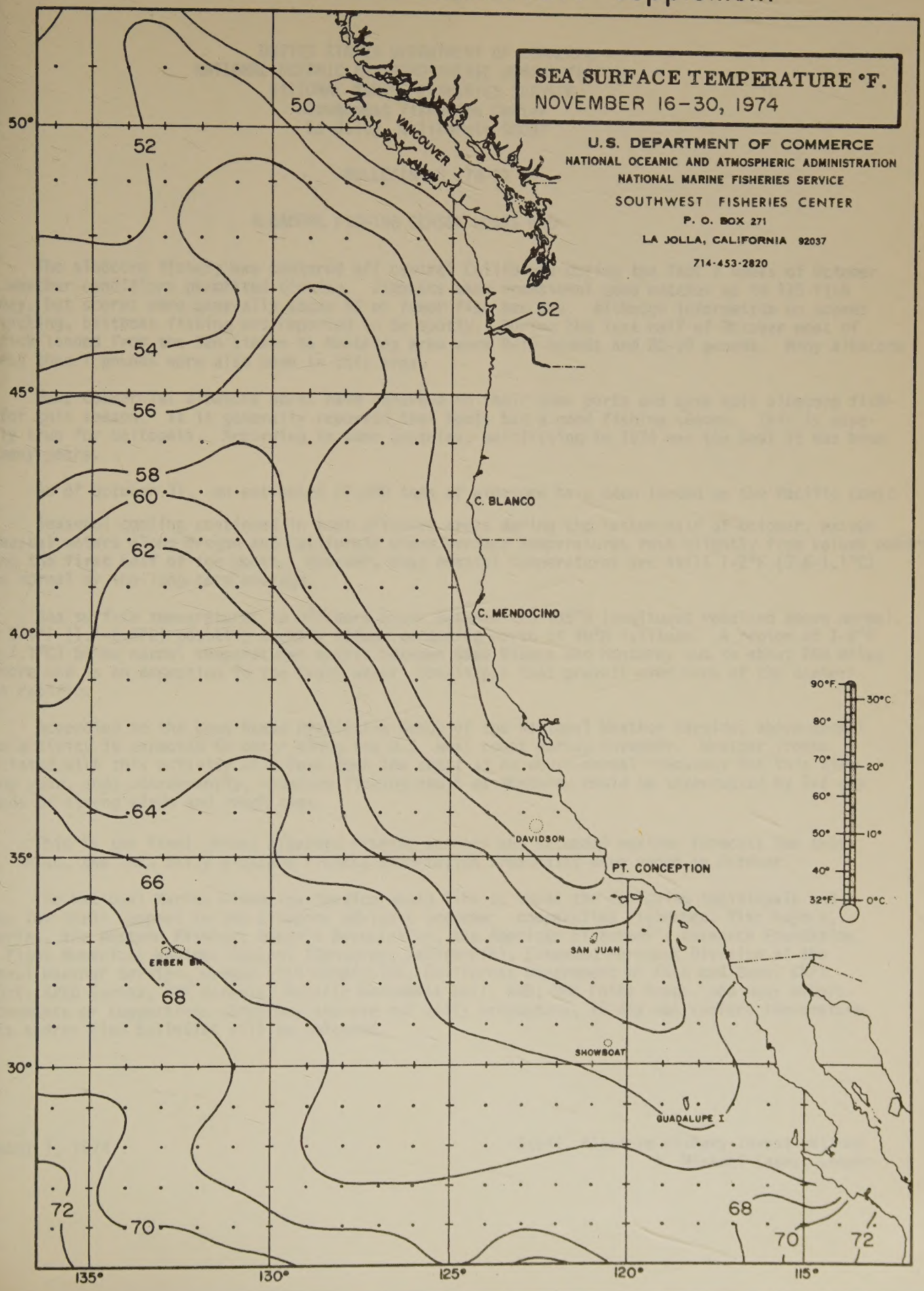
VOYAGE 49



FISHING INFORMATION – supplement



FISHING INFORMATION – supplement



UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
La Jolla, California 92037

BULLETIN NO. 74-11

ALBACORE FISHING SEASON NEARS END

The albacore fishery was centered off central California during the last 2 weeks of October hen weather conditions permitted fishing. Jigboats made occasional good catches up to 175 fish er day, but scores were generally about 50 or fewer fish per day. Although information on scores as lacking, baitboat fishing was reported to be spotty. During the last half of October most of he fish landed from the San Simeon to Monterey area were 9-12 pounds and 20-30 pounds. Many albacore f less than 7 pounds were also seen in this area.

Many commercial albacore boats have returned to their home ports and have quit albacore fish- ng for this season. It is generally reported that boats had a good fishing season. This is espe- ially true for baitboats. According to some captains, baitfishing in 1974 was the best it has been or many years.

As of October 31, an estimated 27,000 tons of albacore have been landed on the Pacific coast.

Seasonal cooling continued in most offshore areas during the latter half of October, except n coastal waters along Oregon and California where surface temperatures rose slightly from values observed uring the first half of the month. However, most coastal temperatures are still 1-2°F (0.6-1.1°C) elow normal or the long-term average.

Sea surface temperatures in offshore areas between 125-135°W longitudes remained above normal, ith 2-4°F (1.1-2.2°C) positive anomaly values occurring north of 40°N latitude. A region of 1-2°F 0.6-1.1°C) below normal temperatures exists between Cape Blanco and Monterey out to about 200 miles ffshore and is an exception to the "warm water" conditions that prevail over much of the eastern orth Pacific.

According to the Long Range Prediction Group of the National Weather Service, above-normal torm activity is expected to occur along the U.S. west coast during November. Weather fronts ssociated with this activity will move down the coast at an above-normal frequency for this time ff the year, and, consequently, albacore fishing south of Monterey could be interrupted by 1-2 day eriods of strong winds and rough seas.

This is the final 15-day albacore fishing summary and extended weather forecast for this ear. Also, the NMFS daily albacore Fishing Information broadcasts were ended in October.

The National Marine Fisheries Service would like to thank the following individuals and roups for their support in the albacore advisory program: cooperating fishermen, fish buyers, anneries, the Western Fishboat Owner's Association, the American Fisherman's Research Foundation, avy Fleet Numerical Weather Central (Monterey, California), Extended Forecast Division of the ational Weather Service, Oregon Fish Commission, California Department of Fish and Game, KNPT ewport, KRED Eureka, KFX Astoria, Pacific Northwest Bell, WWD, NMC Point Reyes, and many others. ny comments or suggestions which may improve our daily broadcasts, 15-day sea-surface temperature harts and/or Fish Bulletins will be welcomed.

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